

REMARKS/ARGUMENTS

Claims 44, 48, 49 and 60-68 are currently pending, of which claims 44, 61, and 65 are the independent claims. Claims 1-43, 45-47, and 50-59 were previously cancelled. No new claims are added herein, and no claims are amended or newly cancelled herein. No new matter is believed to have been introduced to the application by this paper. Reconsideration and further examination are respectfully requested.

Claim Rejections – 35 USC § 103

Claims 44, 61, and 65 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U. S. Pat. No. 6,278,193 (“Coico”) in view of U. S. Pat. No. 6,081,040 (“Okuda”). Claims 48, 49, 60, 62-64, and 66-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Coico in view of Okuda, and further in view of the Flip Chip Ball Grid Array (FPBGA) Package Family reference (“Flip Chip”). Claims 44, 61, and 65 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Pat. No. 5,075,201 (“Koh”). Claims 48, 49, 60, 62-64, and 66-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Koh in view of Flip Chip. Claims 44, 61, and 65 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Coico in view of Japanese Pat. Pub. No. JP405123237A (“Shimizu”). Claims 48, 49, 60, 62-64, and 66-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Coico in view of Shimizu, and further in view of Flip Chip. Claims 44, 48, 49, 60, 62-64, and 66-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 5,894,172 (“Hyozo”) in view of Flip Chip, and further in view of Shimizu. Claims 44, 61, and 65 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Coico in view of Hyozo. Claims 44, 48, 49, and 60-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Hyozo in view of Hyozo, and further in view of Flip Chip. Claims 65-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Coico in view of Hyozo, further in view of Flip Chip, and further in view of Shimizu. Claims 44, 61, and 65 stand rejected under 35 U.S.C. 103(a) as

allegedly being unpatentable over Koh in view of Shimizu. Claims 48, 49, 60, 62-64, and 66-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Koh in view of Shimizu, and further in view of Flip Chip. Claims 44, 61, and 65 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Koh in view of Hiromasa. Claims 48, 49, 60, 62-64, and 66-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Koh in view of Hiromasa, and further in view of Flip Chip. Claims 65-68 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Koh, Hiromasa, Flip Chip, and further in view of Shimizu. Reconsideration and withdrawal of these rejections are respectfully requested.

Independent Claim 44 is directed to a circuit component comprising a substrate and a semiconductor chip over a top surface of said substrate. The semiconductor chip has a front surface facing said top surface of said substrate and a back surface opposite said front surface. The semiconductor chip comprises multiple pads at said front surface. An identity of product is directly on said back surface of said semiconductor chip. Multiple metal bumps are between said multiple pads of said semiconductor chip and said top surface of said substrate. An optically transparent layer is vertically over said identity of product. The identity of product is visible through said optically transparent layer.

Independent Claim 61 is directed to a circuit component comprising a substrate and a semiconductor chip over a top surface of said substrate. The semiconductor chip has a front surface facing said top surface of said substrate and a back surface opposite said front surface. The semiconductor chip comprises multiple pads at said front surface. An identity of manufacturer is directly on said back surface of said semiconductor chip. Multiple metal bumps are between said multiple pads of said semiconductor chip and said top surface of said substrate. An optically transparent layer is vertically over said identity of manufacturer, wherein said identity of manufacturer is visible through said optically transparent layer.

Independent Claim 65 is directed to a circuit component comprising a substrate and a semiconductor chip over a top surface of said substrate. The semiconductor chip has a front surface facing said top surface of said substrate and a back surface opposite said front surface. The semiconductor chip comprises multiple pads at said front surface. A bar code is directly on said back surface of said semiconductor chip. Multiple metal bumps are between said multiple pads of said semiconductor chip and said top surface of said substrate. An optically transparent

layer is vertically over said bar code. The bar code is visible through said optically transparent layer.

The applied references, either alone or in combination, are not seen to teach or suggest the foregoing combination of features of each of independent Claims 44, 61, and 65.

A. Independent claims 44, 61, and 65 over Coico and Okuda

The Office Action acknowledges that Coico fails to disclose or suggest “an optically transparent layer vertically over,” “said identity of product,” as recited in independent claim 44, “said identity of manufacturer,” as recited in independent claim 61, or “said bar code,” as recited in independent claim 65. See Office Action, p. 3. The Office Action further acknowledges that Okuda fails to disclose these features of independent claims 44, 61, and 65. See Office Action, p. 3. However, the Office Action states “[t]hough explicitly silent to be transparent, the Examiner notes that as the alignment mark is detected optically through the protection layer which results in smoothness and decreasing the noise, it would have been obvious to one of ordinary skill in the art that such a protective layer be transparent to permit for easy detection, as is conventional in the art.” See Office Action, p. 3. Applicants respectfully disagree.

Applicants respectfully submit that Coico’s alignment mark 21 is used in chip assembly to align Coico’s chip 12 with Coico’s substrate 15. See Coico, col. 3, ll. 25-30 and Fig. 2. However, Okuda’s alignment mark 7, covered with Okuda’s protection layer 8, is used in wiring formation by laser trimming to a thin-film resistor, which has a different function than Coico’s alignment mark. Thereby, a surface on Okuda’s alignment mark 7 is taught to be smoothed, resulting in a decrease in noise and an improvement of the contrast of the beam reflected from Okuda’s alignment mark 7. See Okuda, col. 3, ll. 13-30. Accordingly, Coico’s alignment mark 21 would not be considered to be covered with Okuda’s protection layer 8 because Coico’s chip 12 is not motivated to be subject to beams for laser trimming, like Okuda’s laser trimming and to acquire the advantage, mentioned by Okuda or the Examiner, resulting from Okuda’s alignment mark 7 being covered with Okuda’s protection layer 8.

For at least these reasons, Coico and Okuda, alone or in combination, fail to teach or suggest all of the elements of independent claims 44, 61, and 65. Accordingly, independent claims 44, 61, and 65 are believed to be allowable over Coico in view of Okuda.

Reconsideration and withdrawal of the rejection of independent claims 44, 61, and 65 are respectfully requested.

B. Independent claims 44, 61, and 65 over Koh

In regards to Koh, the Office Action alleges that Koh's fiducial or indicia 42 or 44 in Figs. 7, 8, or 10 disclose an identity of product. See Office Action, p. 6. The Office Action states that "the limitation of 'identity of product,' 'identity of manufacturer,' and 'bar code' all appear to be directed towards limitations of printed matter/intended use...printed matter/markings are not functionally related to the substrate and appear to be used solely to provide information...they are not patentably distinct from the prior art which also teaches markings to provide information (even though of a different type of information), through the alignment marks (see In re Gulack/Ngai)." See Office Action, p. 6. Applicants respectfully disagree.

Applicants respectfully submit that an alignment mark, such as Koh's fiducial 20a, is used to align two elements, for example, the alignment of Koh's bump contacts 14 of Koh's array 40b to Koh's contacts 32 of Koh's module 30. See Koh, col. 7, ln. 44-49. However, Koh's fiducial 20a is not used to identify a product or to identify a manufacturer and cannot be deemed as a bar code. Accordingly, Koh's fiducial 20a has different functions from an identity of product, as currently claimed in Claim 44, an identity of manufacturer, as currently claimed in Claim 61, or a bar code, as currently claimed in Claim 65. The claimed identity of product, identity of manufacturer or bar code is believed to have functional descriptive materials different from those of Koh's fiducial 20a. Furthermore, Koh's fiducial 20a is not believed to be interpreted as identity of product or manufacturer because a product or manufacturer cannot be identified based on Koh's fiducial 20a that is used to align two elements. Also, Koh's fiducial 20a is not believed to be interpreted as bar codes because Koh's fiducial 20a is not taught to be read by a bar-code reader. Thus, Koh fails to disclose or suggest "an optically transparent layer vertically over," "said identity of product," as recited in independent claim 44, "said identity of manufacturer," as recited in independent claim 61, or "said bar code," as recited in independent claim 65.

For at least these reasons, Koh fails to teach or suggest all of the elements of independent claims 44, 61, and 65. Accordingly, independent claims 44, 61, and 65 are believed to be allowable over Koh. Reconsideration and withdrawal of the rejection of independent claims 44, 61, and 65 are respectfully requested.

C. Independent claims 44, 61, and 65 over Hyozo, Flip Chip, and Shimizu

Hyozo discloses information set on a bare chip 1. See Hyozo, Figs. 1-16. However, Hyozo fails to disclose or suggest information that is visible through an optically transparent layer vertically over the information. In addition, Hyozo discloses that if a laminate 22 covers a chip 1, a type name 8 is printed on a surface of the laminate 22, but the type name is not printed on the chip 1. See Hyozo, col. 10, ll. 61-67 and Figs. 30 and 31. Accordingly, Hyozo fails to disclose or suggest that the information would be covered by any laminate, particularly a transparent laminate, for example.

Applicants note that the transparent resin member of Shimizu is taught to be applied onto Shimizu's bar codes 3A and 3B printed on a bowl 1 that is significantly different from Hyozo's chip 1, or Hyozo's, laminate 22, in terms of usage, size or shape. Shimizu's bowl 1 is a kitchenware, but Hyozo's chip 1 and Hyozo's laminate 22 are typically used as inner parts packaged on a circuit board in an electronic device. Accordingly, Shimizu's transparent resin member used for a bowl would not be considered to be applied onto inner parts, such as Hyozo's chip 1 and Hyozo's laminate 22, packaged on a circuit board in an electronic device. Applicants respectfully submit that Flip Chip fails to disclose or suggest an optically transparent layer over an identity of a product, manufacture or bar code, and the Office Action does not assert that Flip Chip discloses these features of the independent claims.

For at least these reasons, Hyozo, Flip Chip, and Shimizu, alone or in combination, fail to teach or suggest all of the elements of independent claims 44, 61, and 65. Accordingly, independent claims 44, 61, and 65 are believed to be allowable over Hyozo in view of Flip Chip, and further in view of Shimizu. Reconsideration and withdrawal of the rejection of independent claims 44, 61, and 65 are respectfully requested.

The other applied reference, Hiromasa, is not seen to cure the above-discussed deficiencies of Coico, Okuda, Koh, Shimizu, Hyozo, and Flip Chip.

For the reasons discussed above, Claims 44, 61, and 65 are believed to be allowable over the applied references. Accordingly, reconsideration and withdrawal of the rejections of Claims 44, 61 and 65 are respectfully requested.

The other claims currently under consideration in the application are dependent from their respective independent claims discussed above and therefore are believed to be allowable over the applied references for at least similar reasons. Because each dependent claim is deemed to

define an additional aspect of the invention, the individual consideration of each on its own merits is respectfully requested.

The absence of a reply to a specific rejection, issue, or comment does not signify agreement with or concession of that rejection, issue, or comment. In addition, because the arguments made above may not be exhaustive, there may be other reasons for patentability of any or all claims that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment or cancellation of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment or cancellation.

CONCLUSION

In view of the remarks set forth herein, Applicant submits that the application is in condition for allowance and respectfully requests a notice to this effect. Should the Examiner have any questions, please call the undersigned at the phone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502624 and please credit any excess fees to such deposit account.

Respectfully submitted,

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